CLAIMS

1. A self cooling packaging comprising:
- a cavity forming a heat exchanger (20) and containing a refrigerant liquid and the vapour thereof;
- a cavity forming an adsorption chamber (30) for pumping of said vapour;
- connection means (40) provided in a common wall (25) of said cavities (20, 30), said connection means comprising a check valve (42);
- actuating means (45) disposed on the side of the adsorption chamber cavity (30) and adapted to open the check valve to an initial position;
- spring means (43) adapted to progressively push the check valve (42) from its initial position to a fully open position.

2. The self cooling packaging according to claim 1, wherein the check valve (42) is adapted to withstand pressure exerted on the side of the heat exchanger cavity (20) and can be opened inside said heat exchanger cavity (20) under the effect of a force exerted by said actuation means (45) and said spring means (43).

3. The self cooling packaging according to claim 1 or 2, wherein the spring means (43) are at rest when said connection means are in a closed position and are loaded by said actuating means (45) in the initial opening position.

4. The self cooling packaging according to any one of claims 1 to 3, wherein the spring means (43) are part of the actuating means (45).

5. The self cooling packaging according to any one of claims 1 to 3, wherein the spring means (43) are part of the connexion means (40).

6. The self cooling packaging according to any one of claims 1 to 5, wherein the actuating means comprise a plunger rod (45).

7. The self cooling packaging according to claim 6, wherein the spring means (43) have a spring stroke comprised between 0.5 and 0.7 of the actuator plunger rod (45) stroke.

8. The self cooling packaging according to any one of claims 1 to 7, wherein the spring means (43) comprise a helical spring.

9. The self cooling packaging according to any one of claims 1 to 7, wherein the spring means (43) comprise a tongue.

10. The self cooling packaging according to any one of claims 1 to 9, wherein the check valve (42) has a plate disk shape.

11. The self cooling packaging according to any one of claims 1 to 9, wherein the connection means (40) comprise a conical shape check valve (42) and a conical shape valve seat (44) formed in the common wall (25).

12. The self cooling packaging according to claim 11, wherein the conical shape has an angle (α) with respect to the common wall (25) comprised between 15° and 30°.

13. The self cooling packaging according to any one of claims 1 to 9, wherein the connection means (40) comprise a sealing member (41) being compressed in a storage position in a direction perpendicular to the check valve (42) opening direction.

14. The self cooling packaging according to any one of claims 1 to 13, further comprising a liquid/gas state separating device (50) disposed in the heat exchanger cavity (20).

15. The self cooling packaging according to claim 14, wherein said liquid/gas state separating device (50) defines a solid angle that includes the connection means (40).

16. A method for cooling the content of a self cooling packaging, said packaging comprising:
- a cavity forming a heat exchanger (20) and containing a refrigerant liquid and the vapour thereof;
- a cavity forming an adsorption chamber (30) for pumping of said vapour;
- connection means (40) provided in a common wall (25) of said cavities (20, 30), said connection means comprising a check valve (42);
- actuating means (45) disposed on the side of the adsorption chamber cavity (30);
- spring means (43);
the method comprising the steps of:
- opening the check valve (42) to an initial position under the action of said actuating means (45);
- pumping the vapour of the refrigerant liquid from the heat exchanger cavity (20) to the adsorption chamber cavity (30);

- progressively opening the check valve (42) to a larger opening with respect to the decrease of the pressure inside the heat exchanger cavity (20) under the action of said spring means (43).

17. A method according to claim 16, comprising the step of further dropping the check valve (42) inside the heat exchanger cavity (20) when the pressure therein has decreased to below a threshold value.